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BLACK CHERRY

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Black cherry, also commonly called cherry, grows in significant commercial quantities only in the northern Allegheny Mountains. Cherry wood is reddish and takes a lustrous finish; it is a prized furniture wood and brings high prices in veneer log form. It is straight-grained moderately hard, and stable; it can be machined easily. Black cherry is widely used in the printing industries to mount engravings, electrotypes, and zinc etchings. It is also used for wall paneling, flooring, patterns, professional and scientific instruments, handles, and other specialty items.

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BLACK CHERRY

(*Prunus serotina* Ehrh.)

Charles J. Gatchell[1]

DISTRIBUTION

Black cherry and its varieties grow under a wide range of climatic conditions (fig. 1). It is found principally throughout the eastern half of the United States, from the Plains to the Atlantic, and the Great Lakes to the Gulf of Mexico. Its range extends from northern Florida west to eastern Texas, north to central Minnesota, and east through northern Michigan, Ontario, and Quebec to Maine and Nova Scotia. It is also found in scattered locations in Arizona, New Mexico, western Texas, Guatemala, and Mexico. It grows extensively in western and central Mexico.

Black cherry is of commercial significance only in a narrow area centering in western Pennsylvania. Major

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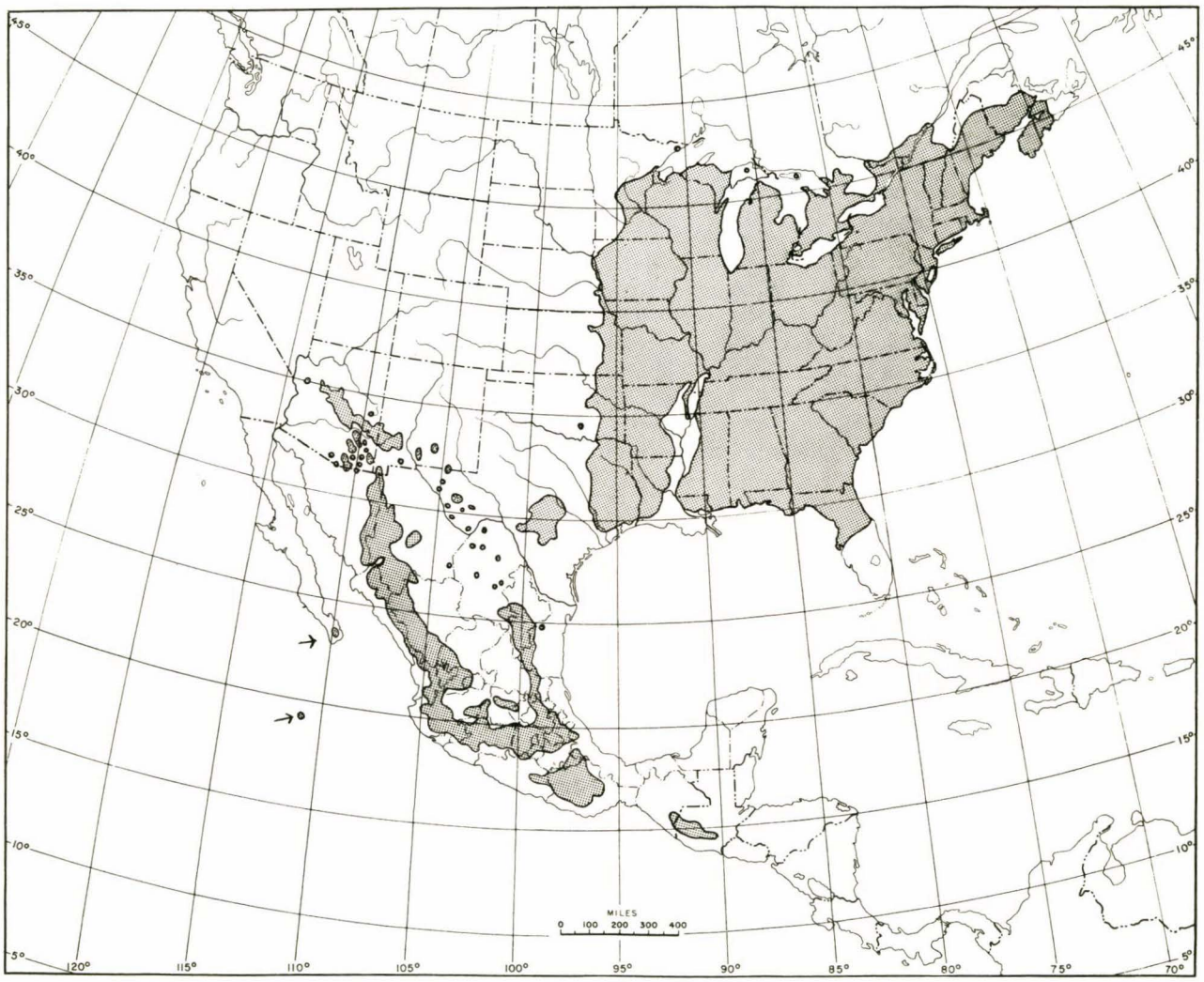

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Figure 1.—Natural range of black cherry, *Prunus serotina*.

commercial stands are in the Allegheny and Pocono plateaus of Pennsylvania and in adjacent areas of the Catskills and western New York, southward into the mountains of western Maryland and West Virginia and into part of northeastern Ohio.

In the area where black cherry is important commercially, the climate is cool, moist, and temperate. Average annual precipitation (32 to 46 inches) is well distributed; average summer precipitation is 20 to 24 inches. The average annual temperature is from 46 to 50 degrees F. with average lows of 20 to 26 degrees F. and average highs of 66 to 72 degrees F. The frost-free growing season ranges from 100 to 160 days.

Within the areas where it grows best, black cherry is found on all kinds of sites except the very swampy or the very dry. The best sites are between 1,000 and 2,600 feet in elevation on podzol or gray-brown podzolic soil types. The best conditions for regeneration are found on moist, fertile, north- and east-facing lower and middle slopes and in coves. Black cherry is a major component of two forest-cover types: Black Cherry-Sugar Maple and Black Cherry.

DESCRIPTION AND GROWTH

On young trees, bark is dark gray to black, and is smooth; trunks are rather small. As trees mature, bark becomes reddish brown, irregularly fissured, and scaly (fig. 2) and peels horizontally. The tree forms perfect flowers after the leaves are well developed. Several species of flies and bees and a flower beetle pollinate blossoms naturally. The fruit is a drupe (fig. 3) about one-fourth the size of domestic cherries, with a slightly bitter pulp and a thick skin that is nearly black when ripe. In the commercial range, the fruit ripens between mid-August and the first of September. Some seeds are produced each year, and good seed crops for entire stands are produced every 3 or 4 years.

Black cherry is reproduced by seeds and by sprouting from stumps. Most seeds fall near the mother tree shortly after the fruit ripens. Some are dispersed by rodents, birds, and other wildlife. Germination results from natural stratification and cold treatment during the winter. Sprouts from root collars of bent or broken seedlings grow into good trees, but sprouts from stumps of merchantable trees often are poorly formed and are subject to heart rot and to breakage from the stump. Most stands resulting from the clearcutting of second-growth are of sprout origin.

Black cherry is an intolerant species, requiring adequate sunlight to become best established. Seedlings develop best in small circular openings or under narrow strip openings in the forest canopy. Light, soil moisture, and microclimatic conditions are best where the width of these openings is about the same as the height of the bordering trees. Seedling growth does not continue for more than 2 or 3 years under an unbroken forest canopy.

Black cherry is highly susceptible to damage from fire; even minor fire damage makes a tree susceptible to attack by various fungi. Gum streaks are caused by cambium-mining larvae of the family *Agromyzidae,* by two species of bark beetles, and by physical injury. The eastern tent caterpillar and the ugly-nest caterpillar are severe defoliators. A leaf-spot disease and several kinds of wood rot also attack the species; most of the rots give no external evidence of their presence.

Black cherry is subject to attack by animals too. Seedlings and sprouts provide food for browsing deer and rabbits. Porcupines may scar and consume bark, thereby providing an entry point for wood-rotting fungi.

The leaves, twigs, and bark of this tree contain hydrocyanic acid; upon wilting, the foliage can be poisonous to livestock.

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Figure 2.—Bark of mature black cherry.

F-490912

Figure 3.—Leaves and fruit of black cherry.

COMMON NAMES

Black cherry and cherry are the names commonly used. Other common names include wild cherry, rum cherry, and mountain black cherry.

SUPPLY

Black cherry is not abundant outside its commercial range. It accounts for only 0.3 percent (about 3 billion cubic feet) of the net volume of hardwood growing stock on commercial forest land in the eastern United States and only 0.2 percent (about 5 billion board feet) of the net volume of hardwood sawtimber. Approximately one-half of the current growing stock is 11 inches in diameter or smaller.

Chances of increased timber volume under present practices do not appear good. Although the commercial range extends from southern New York to West Virginia, the better quality material is generally found in quantity only in Pennsylvania. The continued high demand for the better grades for use in furniture, veneer, and plywood—along with the small volume available—seem to insure an increasingly short supply. It is not grown in plantations in any volume.

Current lumber prices for black cherry rank the species comparable in value to hard maple; higher than ash, but lower than yellow-birch. Cherry is most valuable in veneer log form, and prices up to $700 per thousand board feet were being paid for the best logs in 1970.

PRODUCTION

The use of black cherry as a furniture material has increased dramatically since 1940 (fig. 4). Until that

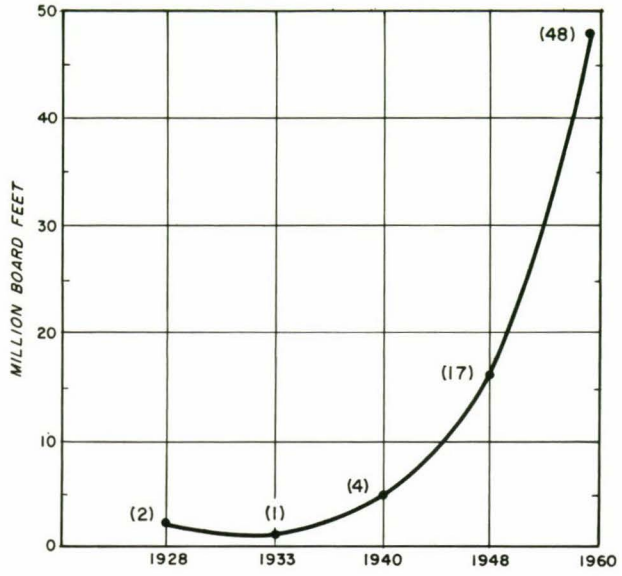

Figure 4.—Black cherry lumber used in the manufacture of furniture—1960. (Source: Wood used in manufacturing industries. 1965. U.S. Dep. Agr. Statist. Bull. 353.)

time, only 1 to 2 million board feet were used per year. From 1940 to 1960, consumption increased more than tenfold from 4 million to 48 million board feet per year. (In 1965, 44 million board feet were used.) Because of the limited present supply, it is unlikely that future increases will be significant.

During 1960 approximately 53 million board feet of lumber, 60 million square feet of veneer (surface measure), and 13 million square feet of plywood (3/8-inch basis) were used. In addition, approximately 1 million square feet of cherry plywood paneling were produced. In 1965, approximately 50 million board feet of lumber, 114 million square feet of veneer, and 21 million square feet of plywood were used.

PROPERTIES

Black cherry is a straight-grained, moderately hard wood with a specific gravity (ovendry) of 0.53. The sapwood is narrow and varies in color from white to light reddish brown. The heartwood varies from light to dark reddish brown. Growth rings are fairly distinct, and wood rays are plainly visible to the naked eye. Dark red gum streaks are sometimes present. The wood is naturally dull but takes on a fine luster when properly finished. The wood's color darkens with age, and it can be finished to bear a strong resemblance to genuine mahogany.

Air seasoning can be done at better-than-average speeds. Once dry, cherry wood is quite stable and does not warp or check with normal changes in relative humidity and temperature. Black cherry is easily machined. It can be sawed cleanly, turned well, and planed excellently with standard cutting angles. Screw-holding ability is good. Gluing is also good except where gum streaks are present. The wood has sufficient hardness to allow it to take hard use and withstand knocks without marring.

PRINCIPAL USES

Black cherry is used principally in lumber form and for manufacturing fine furniture. In the printing and engraving industries it is a preferred material because of its strength, hardness, moderate shrinkage, and ability to stay in place. It is used to mount engravings, electrotypes, and zinc etchings. It is also used for patterns, professional and scientific instruments, piano actions, handles, woodenware, toys, and other specialty items.

Extracts from the bark are used in the preparation of wild cherry syrup, a popular vehicle for cough medicines. The fruit can be used for making jelly or wine. Early pioneers sometimes used the fruit to flavor their rum or brandy.

REFERENCES

Anonymous.
1952. Know your wood: black cherry *(Prunus serotina)*. Woodworking Dig. 54: 79–81.

Arkwright, P.
1965. Know your timber no. 127. Woodworking Ind. 22(2): 47.

Carvell, K. L., and Koch, C. B.
1963. Black cherry—its abundance, quality, and rate of growth in the oak-hickory and cove forests of West Virginia. W. Va. Univ. Agr. Exp. Sta. Bull. 485, 11 p.

Davis, E. M.
1962. Machining and related characteristics of United States hardwoods. U.S. Dep. Agr. Tech. Bull. 1267. 68 p.

Degler, Roy H.
1965. The wild black cherry, Mo. Conserv. 17(2): 4–60.

Gill, Thomas G., and Phelps, Robert B.
1969. Wood used in manufacturing industries, 1965. U.S. Dep. Agr., Forest Serv. Sta. Bull. 440, 101 p., illus.

Hough, Ashbel F.
1960. Silvical characteristics of black cherry *(Prunus serotina)*. U.S. Forest Serv. Northeastern Forest Exp. Sta., Sta. Pap. 139. 26 p.

Osol, Arthur; Pratt, Robertson, and Altachule, Mark. (eds.)

1967. The United States dispensatory and physician's pharmacology. Ed. 26, 1,277 p. Philadelphia and Toronto: J. P. Lippincott.

Panshin, A. J., and De Zeeuw, Carl.

1964. Textbook of wood technology. Ed. 2. Vol. I, 643 p. American Forestry Series. New York: McGraw-Hill Book Co.

U.S. Forest Products Laboratory.

1955. Wood handbook. U.S. Dep. Agr., Agr. Handb. 72. 528 p., illus.

U.S. Forest Service.

1965a. Silvics of forest trees of the United States. U.S. Dep. Agr., Agr. Handb. 271. 762 p., illus.

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1965b. Timber trends in the United States. U.S. Dep. Agr. Forest Res. Rep. 17. 235 p., illus.

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